

CIO

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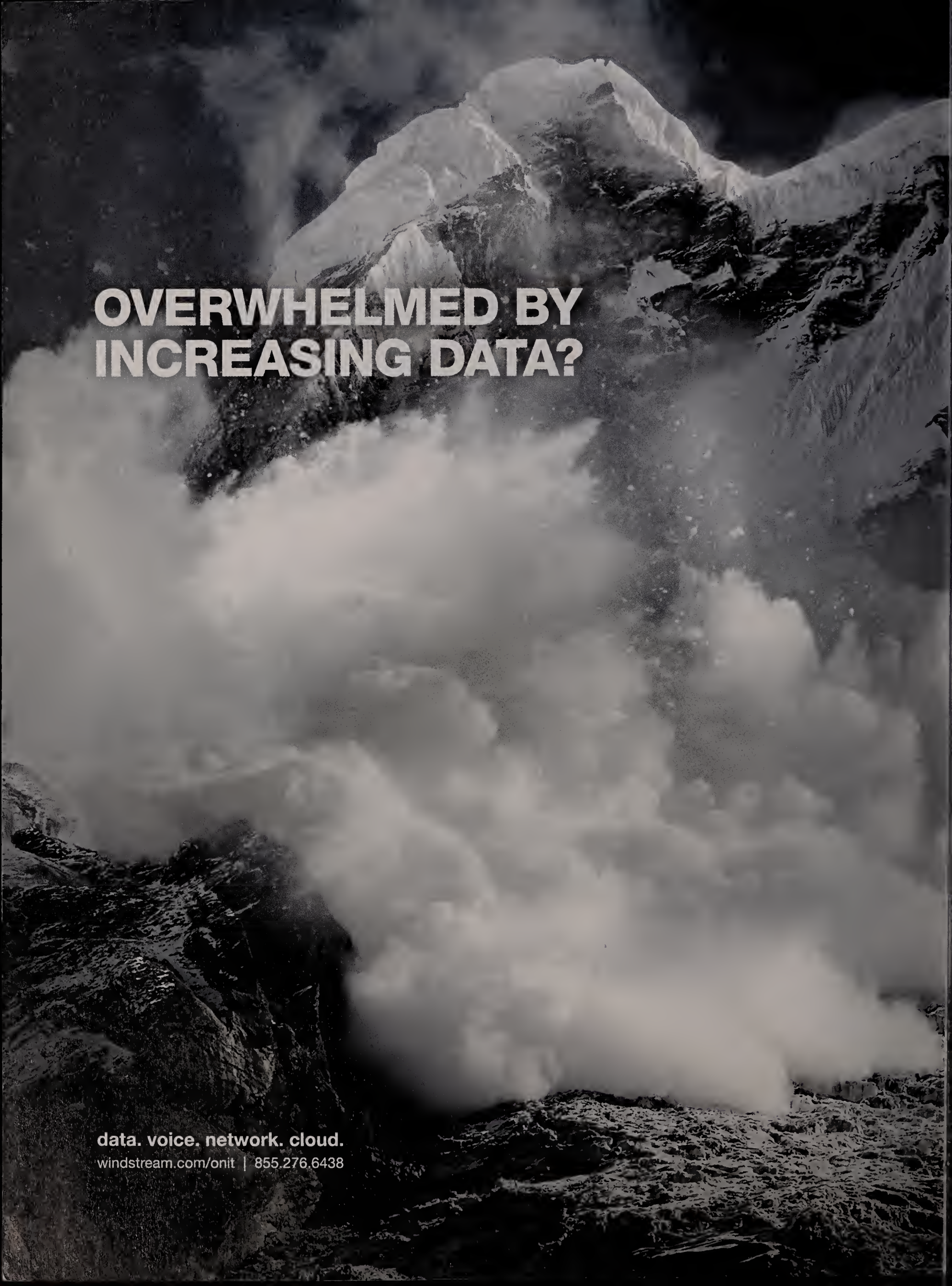
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of weather information,
multiple industries now profit
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BY KIM S. NASH

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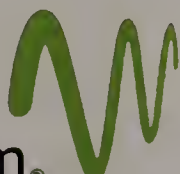
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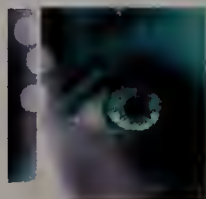
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COVER STORY By analyzing a wealth
 of weather information, multiple
 industries now profit from the
 shifting winds of Mother Nature

BY KIM S. NASH



"Weather is the original big-data problem," says **Bryson Koehler**, CIO of The Weather Channel, which processes 20 terabytes of data about the weather every day and sells custom analytics to business customers.



FROM THE
EDITOR IN CHIEF

start

CHATTER

Data From Heaven

Every week I chat with CIOs from all over the country, and invariably we start with some small talk about the weather. Living in the Boston area (where “fifties and raining” is not an uncommon report), I’ve usually got something to complain about. As a universal icebreaker, you really can’t beat weather chitchat.

What I hadn’t realized—until I spoke one day with CIO Bryson Koehler of The Weather Channel—was how much big business and profit potential turns on those whims of Mother Nature. “Weather is the original big-data problem,” says Koehler, whose IT staff processes 20 terabytes of weather data every day.

“Weather provides no shortage of business opportunities because it affects everyone,” writes Managing Editor Kim S. Nash in our cover story (“Big Data from Above,” Page 28), which takes you on an illuminating tour of the weather-data industry. “Demand will probably never ebb. As a result, the world of weather data is competitive, niche-y and expensive.”

Indeed, multi-million-dollar decisions by retailers, pharmaceutical companies, transportation giants and scores of other companies now hinge on how well they make use of this wealth of heaven-sent data.

DHL Express, for example, uses weather data to make decisions affecting 3,000 flights a day worldwide. In 2010, the company relied on its weather-tracking tools to decide when it was safe to fly into western Europe after the eruption of an Icelandic volcano halted air traffic for eight days.

Home insurer EMC Insurance uses weather data to check the veracity of hail-damage claims. Sears made profitable use of in-depth forecasts as snowstorm Nemo approached in February. The retailer rerouted its supply chain to get extra snowblowers and generators closer to affected areas.

“If you’re selling seasonal products and you’re not using weather data, you’re not doing your job,” one supply-chain consultant tells us.

Advances in analytics technology paired with a plethora of weather data allow greater analytical creativity and exactitude, says Tom Davenport, a senior adviser to Deloitte Analytics.

As data-analysis capabilities grow more sophisticated, custom services are springing up to cater to corporate needs. AccuWeather, for example, can crunch point-of-sale data against some 200 weather variables to identify retail patterns. Can you guess what the top-selling food during hurricanes is? (Hint: It’s blueberry-flavored.)

Maryfran Johnson, Editor in Chief, CIO Magazine & Events
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LivingSocial’s Lessons

Fifty million users had to **reset their passwords** after a cyberattack on LivingSocial that **revealed some names, birthdays and email addresses**, though the company says no accounts or credit card information were compromised. Contributing Writer John P. Mello Jr. talked with an expert from security vendor Ahn-Lab, who says this attack firmly supports the case for **two-factor authentication** everywhere. LivingSocial is now making moves to better protect its customer passwords by hashing them in a **stronger algorithm**. www.cio.com/article/732468

Health Data Discovery

Healthcare organizations can add **terabytes of patient records** to their data centers every year. Senior Editor Brian Eastwood says if companies could analyze the data, they would know more about patients and how to **provide better, cheaper care**. Eastwood interviewed the CIO of Beth Israel Deaconess Medical Center, which is rolling out a mobile app giving medical workers access to **200 million data points about 2 million patients**. www.cio.com/article/732160

Avoid BYOD Legal Trouble

While bring-your-own-device policies may provide **more flexibility** for employees, companies need to **respect privacy and work hours**. Senior Online Writer Tom Kaneshige talked with the CEO of AirWatch, a mobile-device-management vendor, who says companies can protect themselves by **drafting comprehensive terms-of-use agreements**, being transparent about the technology and **educating the IT staff** about the BYOD environment. www.cio.com/article/732156

Compiled by Staff Writer Lauren Brousell.
Have a comment about a story in this issue? Go to www.cio.com/issue/20130601 or write to letters@cio.com.

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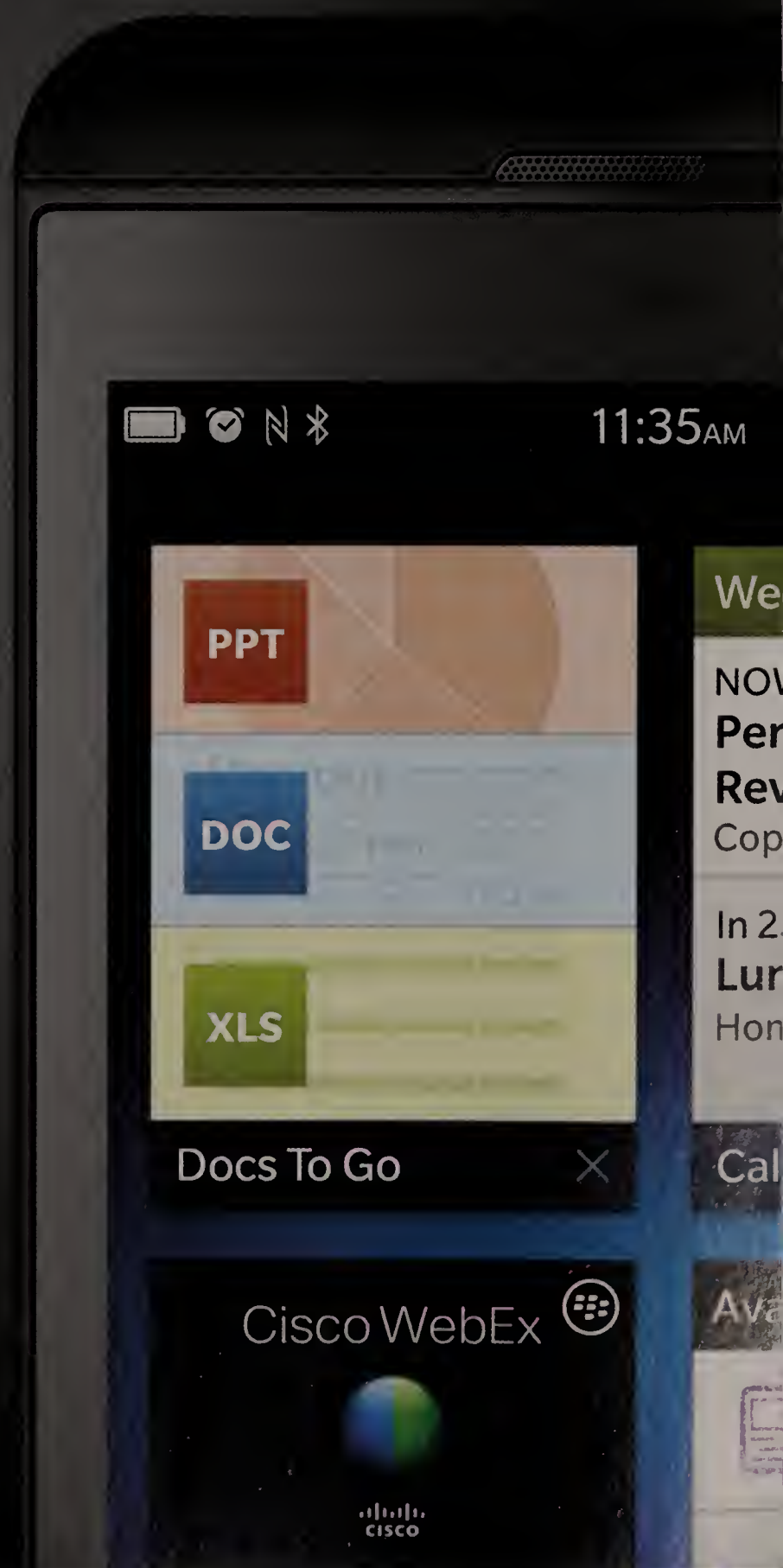
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FROM THE **CEO**

Our Next Great Era

It's often argued that the most important era in U.S. history was the Industrial Revolution, that period from roughly 1760 to 1840 when almost every aspect of business and daily life changed.

The shift from manual labor to machines, from wood to coal, from farms to cities—those are just a few of the ways our world changed dramatically when a new era of U.S. economic power was born. We are now at the beginning of the next great economic era, which is being ushered in by the Industrial Internet Revolution. Today's world has approximately 6.8 billion people and 12.5 billion connected devices. At the rate things are going, by 2020 we'll have about 7.6 billion people and 50 billion connected devices.

What happens when we can merge the power of intelligent devices, intelligent systems, and intelligent automation with physical machines, facilities and networks? One answer is that an estimated \$10 trillion to \$15 trillion—an amount nearly equal to the current U.S. economy—will be added to the global GDP, according to Peter Evans, GE's director of global strategy and analytics, and Marco Annunziata, GE's chief economist.

In their November 2012 report, "Industrial Internet: Pushing the Boundaries of Minds and Machines," Evans and Annunziata also predict that 46 percent of the global economy, or \$32.3 trillion worth of global output, will benefit from the Industrial Internet.

Why is this important? Because "emerging markets have an advantage in 20th-century things like labor costs," says Kenneth Cukier, co-author of *Big Data: A Revolution that Will Transform How We Work, Live and Think*. He argues that big data "lets the West claim an advantage in the 21st-century way, as one can become more efficient and productive by harnessing the data."

This emerging ability to draw together fields such as machine learning, big data, and the Internet of Things will not only improve efficiency, it will also drive new revenue streams and create new markets, which we see happening all around us already.

As GE's Evans and Annunziata point out in their report, that powerful combination of increasingly intelligent machines, advanced analytics and a constantly connected, mobile population is "pushing the boundaries of minds and machines."

How are these changes rolling out in your life? I'd love to hear your perspective on the Industrial Internet, so drop me a line.

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numbers you need

Conversations That Matter

Companies earn a higher 'digital IQ'—and higher profits—if the CIO has a collaborative relationship with other top execs **BY LAUREN BROUSELL**

Companies with strong relationships between the CIO and other C-suite executives are four times as likely as less-collaborative teams to achieve business results such as revenue growth and high profit margins, according to PricewaterhouseCoopers' fifth annual Digital IQ study.

PwC polled 1,108 business and technology leaders globally and split their responses into two groups: the 13 percent of respondents who rated themselves as "strong collaborators" in the C-suite, and the rest who didn't. The study found a big correlation between strong C-suite collaboration and top business performers, which PwC defined as companies reporting revenue growth of 5 percent or more in the previous year and high levels of profitability, revenue and innovation.

Why the correlation? C-suites characterized as strong collaborators typically link their IT road map to corporate strategy, the study says.

Chris Curran, a principal at PwC and chief technologist for the U.S. firm's advisory practice, says that the CIO must initiate "digital conversations" that help the C-suite view IT as an important part of business strategy. "The senior

leader is trying to affect transformational change and, for most companies, IT and the digital world is going to be front-and-center to make it happen," Curran says.

Getting the CEO on board with critical IT goals is key—and a sign that a company has a high "digital IQ," the study says. Eighty-two percent of the collaborative executives say their CEO is a champion of IT, compared with 54 percent of the less-collaborative group of executives.

Furthermore, the strong collaborators were more likely than the others to have a single, multiyear road map for business strategy, which helps them foster innovation and deliver projects on time and on budget, PwC says.

Warren Kudman, CIO of Sealed Air, says he is keenly aware of the need for C-suite collaboration and won't execute a project without clear business partnerships in place. "We don't define success as delivering a functioning tool," he says. "We are accountable for the [business] value that was delivered."

Contact Staff Writer Lauren Brousell at lbrousell@cio.com. Follow her on Twitter: [@lbrousell](https://twitter.com/lbrousell).

The Big-Data Advantage

Harnessing big data will give my organization a competitive edge:

Execs in a collaborative C-suite: **83% agree**



Other executives: **65% agree**



Social Media Fans

We'll increase our use of Facebook for business purposes in the next 12 months:

Execs in a collaborative C-suite: **56% agree**



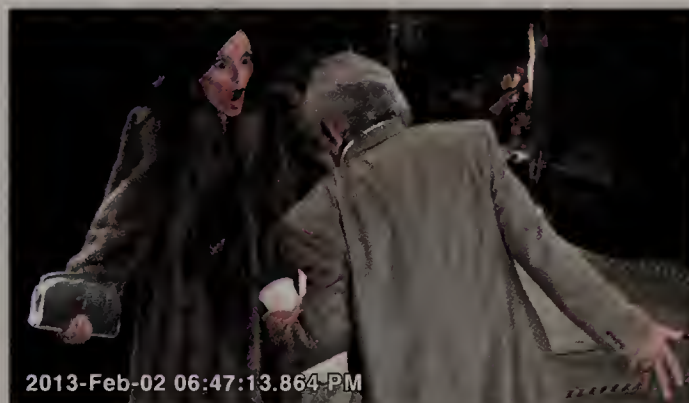
Other executives: **35% agree**



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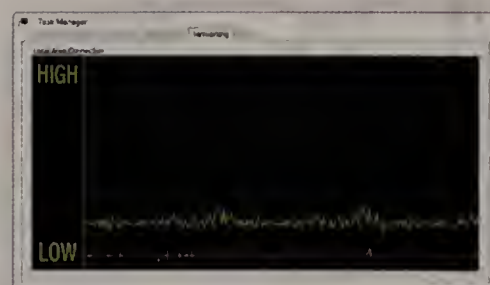
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Are You a Job-Hopper?

How to explain frequent job changes to a hiring manager

1 Point to your experience in several industries and say you've encountered a variety of challenges, which can lead companies to believe you are flexible and a quick learner.

2 If you didn't initiate the change, say so—for example, if you left as the result of outsourcing, downsizing or the collapse of a startup.

3 Adjust your résumé to focus less on date ranges and more on achievements. Explain how you were critical to the success of key projects and the company as a whole.

—Rich Hein



For more tips, see: www.cio.com/article/731088



WORTH READING

Decisive

By Chip Heath and Dan Heath

The authors of *Switch* and *Made to Stick* are back with a compelling, useful guide to making wiser choices. They parse the latest psychological research on the biases and irrationalities of our decision-making process, and then they lay out a process-based approach that could help anyone rethink how they think. *Crown Publishing, \$26*



quick
FIX



I have a big presentation to the board coming up. How do I prepare?

ALWAYS remember to describe your goal early in your presentation. This helps create a foundation of understanding for your conversation with the board of directors. Focus your updates, funding requests and other topics through the lens of how they will benefit the end user, customer or business, or how they will affect the budget. Keep your PowerPoint slides minimal and to the point. The board will stay engaged when you connect your message to concepts they can relate to and understand.

SOMETIMES it may be helpful to do some advance work, reaching out to any board members who aren't tech-savvy before the meeting. Tell them what you'll be discussing and what impact it may have on the business. This gives them time to ask questions in private and alerts you to any concerns about your idea ahead of time. Then, in your formal presentation, you may choose to involve those same people in your presentation. You could, for instance, mention them by name and say, "I know you are concerned about X, here's what we've done to address that..." This shows you are confident and pay attention to detail, and it builds goodwill.

NEVER be so comfortable in how much you know that you forget to engage your audience. More than 90 percent of your impact as a presenter is based on the effectiveness of your voice tone and body language, including eye contact. Reading slides or notes to the board implies a lack of confidence. If there is something distracting about your communication style, your board will never hear what you're saying. Do a practice run in front of family, friends or (even better) a video camera.

Karlyn Lothery is president of Lothery and Associates, a strategic communications firm.



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Solving the Information Access Riddle

Market
Pulse

FOR ENTERPRISE IT LEADERS, HOW TO PROVIDE EMPLOYEES FAST, SECURE ACCESS TO INFORMATION IS THE QUESTION. COMPREHENSIVE DATA MANAGEMENT SOLUTIONS ARE THE ANSWER.

Data management poses a serious dilemma for today's hard-pressed IT managers. Not only must they give end users anytime access to information from desktops, notebooks, smartphones and tablets, but they must also do so without compromising security.

"Those two goals are very much at opposition with each other," notes Jason Buffington, a senior analyst at Enterprise Strategy Group Inc., of Milford, Mass.

To make matters worse, both data and data silos are accumulating in ever-greater quantities these days. That complicates finding information, plus makes backing it up and archiving it more difficult.

Indeed, a recent IDG Research Services survey of enterprise technology executives reveals just how seriously data management complexity impacts both knowledge workers and IT departments. Fully 42 percent of respondents say that securely accessing data outside the office is extremely or very challenging for end users, and 59 percent report the same of locating information swiftly across silos. Meanwhile, a whopping 80 percent of those polled say IT professionals at their company spend a moderate or substantial amount of time helping end users retrieve information instead of pursuing strategic objectives.

According to Buffington, only an all-encompassing solution can tackle a problem of such sweeping dimensions. "You can find niche technologies, [but] you should be thinking more holistically," he says.

Greg White, senior manager for product marketing at Oceanport, N.J.-based software maker CommVault Systems Inc., agrees. "Addressing information access issues comprehensively takes a solution with equally comprehensive functionality," he says. That should include a silo-busting, unified virtual content repository and easy-to-use access features that empower employees to find needed information quickly, yet securely, from any device. "You need intuitive, end-to-end functionality on a single platform," White states.

Data from the IDG study suggests that's precisely what most IT leaders want. Some 74 percent of survey respondents indicate they'd be interested in a single-platform data management solution, while 87 percent

express interest in a solution offering secure anytime, anywhere access to information. Moreover, 44 percent of survey participants identify reduced risk of data loss and leakage as an appealing benefit of using a comprehensive data management solution, and 52 percent cite better, faster decision making.

All-inclusive data management systems pay other important dividends too. For example, by giving users speedy access to information wherever they need it, single-platform solutions enhance employee productivity.

"SOME 74 PERCENT OF SURVEY RESPONDENTS INDICATE THEY'D BE INTERESTED IN A SINGLE-PLATFORM DATA MANAGEMENT SOLUTION, WHILE 87 PERCENT EXPRESS INTEREST IN A SOLUTION OFFERING SECURE ANYTIME, ANYWHERE ACCESS TO INFORMATION."

They also make IT departments more efficient by eliminating data retrieval burdens and simplifying administration. "Right away you can see it would [produce] cost savings to have a singular product that does data protection/recovery as well as data management and endpoint protection all under a single wrapper," observes Robert Amatruda, research director for data protection and recovery at analyst firm IDC, of Framingham, Mass.

No wonder IT decision makers want comprehensive data management solutions so badly. "Access to information has never been more important for end users, but providing that access has also never been harder for IT leaders," White says. "By putting all of a user's information securely at their disposal from any device, comprehensive data management solutions address both of those issues."

For a copy of the full report, visit:
www.cio.com/whitepapers/commvault_datamgmt





Greg Meyers, VP of IT at Biogen Idec, draws on his marketing experience to build relationships.

13

No More Troubled Waters

One marketer-turned-CIO offers four key techniques for bridging the gulf between IT and marketing **BY STEPHANIE OVERBY**

When Greg Meyers was hired as vice president of IT at Biogen Idec, he had to build a relationship with marketing from scratch. Luckily, he was uniquely qualified. "I spent half of my professional life in sales and marketing and the other half in IT," says Meyers, who previously ran a hybrid marketing and technology group at Johnson & Johnson. He was in marketing at Qwest and, most recently, a CIO at Novartis.

Meyers wasn't surprised that marketing and IT hadn't gelled at Biogen. That's been the case everywhere he's worked. "There are a lot of built-in rifts between the two groups," he says.

The steps to create an effective relationship with the marketing group aren't radically different from those you'd take with another department. "What's different is the underlying marketing personality," says Meyers. "It doesn't change what you do, but it changes how you have to be." Most IT-marketing friction is attributable to differences in style, not substance, he says. Those differences can be overcome, and Meyers has four tips to help you do it. ►►►

.....**71%** Companies that have changed at least one business process to take advantage of mobile and consumer technologies. Avande

►►► **Marketing** Continued from Page 13

Stop talking about tech. Want to win over a marketer? Forget the campaign-management software and ask about her brand marketing plan. Putting the project work aside to find out what keeps the marketing group up at night gives IT credibility to use later. "When you're trying to negotiate with [marketers], using facts often doesn't work," he says. It helps "if they know that you're supportive of what they're trying to accomplish."

Be a hero. Biogen's marketers have a huge appetite for analytics. What they don't have are data scientists. Guess who does? "Our IT people have those analytical skill sets naturally," says Meyers. Instead of hiring consultants, marketing now turns to IT's business analysts, one of whom recently designed marketing's suite of analytics tools for campaign management.

Be the heavy. Marketers work with tons of outside agencies. But Meyers—who has worked at an interactive marketing agency—knows that agencies may not put marketing's best interests first. Meyers is the voice of reason when marketing might otherwise cave in to an agency that wants to build a smartphone app that doesn't meet the company's needs. "We're in the room so that marketing gets the most from its investments," says Meyers. One agency wanted Johnson & Johnson to build a site entirely in Flash. It looked cool, but it wasn't user-friendly. "The agency was more interested in using this project to try to win an award or showcase their work for future clients than [helping] us achieve [our] very specific objectives, and I pretty much said so in the meeting," Meyers recalls. It was uncomfortable. But the brand manager thanked Meyers—and fired the agency.

Don't be a know-it-all. "Marketing people are used to being the smartest people in the room," says Meyers. Let them be. If you have a good idea, make it seem like theirs. That is, don't present a five-page social media plan. Instead, stroll in with an idea you had in the shower and ask for input. "They need to be part of the ideation and creative process," Meyers says.

Stephanie Overby is a freelance writer based in Massachusetts.

"Marketing people are used to being the smartest people in the room."

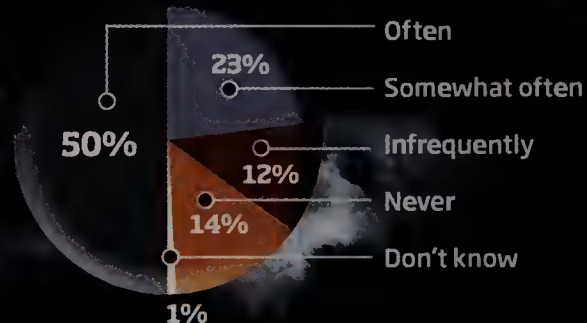
—Greg Meyers, VP of IT,
Biogen Idec

crunch

CIOs **DON'T DISCONNECT** After Hours

The job doesn't end at the close of business, but CIOs should take a break, when possible, to recharge their batteries

How often
do you check
in with work
on evenings
and week-
ends?



SOURCE: ROBERT HALF TECHNOLOGY, SURVEY OF 2,300 CIOs, APRIL 2013

How to Know If Your App Is Good Enough

Martin Hudson, CTO of Mobile Data Systems, a London-based consultancy, is often called in when an enterprise mobile app project has gone awry—that is, there's little to no engagement with the app from the target audience. Typically, the problem is that the IT staff has rushed the job, packed in too many features or failed to make the app user-friendly.

So how do you define user-friendly? Hudson has a definition that works well: 80 percent of users can perform the most important task on their first attempt. Mobile Data Systems gathers 10 to 15 people who fit the target-user demographic. The group is given a single attempt to perform the most important task without any instructions or documentation.

Each user gives a running commentary on what they're doing and thinking. Mobile Data Systems records the action but does not correct users when they take a wrong turn. After the trial, the consultancy adjusts the mock-up and gathers another group of people. "At the end of the third cycle," says Hudson, "we usually get to 80 percent."

—Tom Kaneshige

..... **34%** Companies that have developed clear metrics to connect their social media activity to business goals such as profit growth. Altimeter Group

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Who Will Take the Big-Data Lead?

Someone must harness the power of real-time data flows.

Will it be the CIO or the CMO? **BY DION HINCHCLIFFE**

For perhaps the first time in history, organizations can now tie their operations into today's global information flows, which come from social media, network-connected sensors, and even our legacy IT systems. These data flows can no longer be ignored.

Ideally, tapping into the big-data stream will foster strategic insight that we can exploit for the benefit of our businesses.

Making traditional business intelligence seem parochial and slow-moving in comparison, big data has set the stage for organizations and the executives that guide them to make critical decisions based on real-time insights into all that is known about any given aspect of their business. Or at least, that's the ultimate vision of what's possible; most organizations will get there incrementally.

There's little doubt, however, that big-data ideas are already working their way through the IT hype cycle. Yet the concepts are driven by genuine changes in the marketplace that are enabling significant, even striking, new forms of business innovation.

Companies in the telecommunications, health and energy industries have all recently harnessed public data flows to drive remarkable results. This includes improved customer retention and much faster, more efficient business processes, all based on having timely data insights.

Interestingly, technology doesn't always play the starring role in this story, though it's often key to success: You may need to use tools such as in-memory databases, new technical models like MapReduce that process vast data streams, and self-learning algorithms that can uncover business insights that you didn't even know to ask for.

If the early returns are a good indicator of the trend, how will businesses go about exploiting big data to unleash real innovation and competitive advantage? How should they best respond to the imperative that big data represents?

Just as important, who will make it happen?

Creating a data-driven business culture and then developing matching infrastructure and processes to support it is a tall order. It's one that requires deft leadership that is both technically competent and well connected to the business.

There are only a couple of roles in most organizations that meet that description: the CIO and the CMO.

One could make the case that in today's increasingly commoditized and outsourced IT world, big data is a chance for a CIO to finally focus on information as the most important currency of the realm, to rise above the less-strategic task of infrastructure management, and finally drive the business.

However, today's CMOs are increasingly becoming the orchestrators of market-connected business functions and building their own IT capabilities to achieve their objectives. In fact, more and

more companies are adding a "CIO of marketing" title, and Gartner has predicted that the CMO's technology budget will eclipse the CIO's in a few short years.

Or instead of focusing on their differences and fighting for the same budgets, the CIO and CMO can come together at this critical juncture in the evolution of their business. They can realize that they have the resources to genuinely support each other, that they each have core competencies that the other can learn from, and that they have overlapping yet reinforcing responsibilities for improving how the business works.

Is this the right way? For most organizations, we don't know yet. But one thing is clear: Big data is coming, and someone is going to make it change your organization. Who will it be?

Dion Hinchcliffe is chief strategy officer at Dachis Group, a social marketing analytics company.

Instead of focusing on their differences and fighting for the same budgets, the CIO and CMO can come together at this critical juncture.



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Disruption on Wheels

A London cab company races to pull in more fares with a new mobile app **BY TOM KANESHIGE**

In 1953, a bunch of taxi drivers in London formed a cooperative for competitive advantage. They were cutting-edge for the time, carrying radios, lashing aluminum ladders to buildings as antenna transmitters, and working in concert to get to passengers ahead of their competitors. Radio Taxis Group was the business disrupter of its day.

Sixty years later, Radio Taxis finds itself on the receiving end of disruption. Startups such as Hailo offer iPhone and Android apps that connect tens of thousands of passengers with taxi drivers every day. Radio Taxis now must rethink its business model to stop the onslaught.

"You can't just stand by, you've got to be in it," says Radio Taxis CIO Gordon Brown.

In the recent economic downturn, the company has struggled: Revenue has plummeted from \$75 million in 2009 to \$48 million last year. Each of Radio Taxis' 2,500 independent drivers

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►►► **Disruption** Continued from Page 18

pays 60 pounds, or about \$90, per week to receive fares from the company. Corporate passengers pay a booking fee. Under this model, Radio Taxis has become heavy with support infrastructure: 300 employees in call-center operations and sales, plus a legacy account-management system.

In comparison, Hailo arrived a year ago and, with free registration, quickly attracted half of the 23,000 licensed taxi drivers in London to its network. Passengers use the free Hailo mobile app to get a cab quickly—an average of two minutes from tap to taxi. Drivers pay 10 percent of each fare to Hailo. The app automatically connects taxi drivers and passengers with digital efficiency, without much infrastructure. Even contending with the red tape of a heavily regulated transportation services industry, Hailo is changing the way people hail cabs.

"Down the road, some massive percentage of transportation requests are going to come through a digital channel," says James McQuivey, a Forrester Research analyst and author of *Digital Disruption: Unleashing the Next Wave of Innovation*.

Revamping a business model to take advantage of new technology can be "a turning point that many companies culturally aren't ready for," McQuivey says. But they must forge ahead to get ahead, he says.

Radio Taxis hired consultancy Mobile Data Systems to develop a Hailo-like app, called Radio Taxis, London's Black Cab. In addition to getting a cab in two taps, customers can find the quickest way to a destination, even if it means skipping the cab and using the Tube. While this seems counterproductive, the goal is to give people more reasons to use the app, says Geoffrey Riesel, Radio Taxis CEO.

The company may be ready to change its business model, but it hopes to preserve some tradition. Although Radio Taxis is looking more like Hailo—reducing driver fees and taking some percentage of the fare—when the older company gets fares through its mobile app, it will still leverage its account-management system and support personnel. The hope, Riesel says, is that good old-fashioned customer service will win the day against the digital disrupters.

"Maybe the Hailo business model works, in which case we'll have to change and get rid of all the infrastructure, but I'd be surprised," he says. "I think it's a mistake to make technology the master."

Contact Senior Online Writer Tom Kaneshige at tkaneshige@cio.com. Follow him on Twitter: [@kaneshige](https://twitter.com/kaneshige).

Enterprise Software Gets a Consumer Makeover

BY JOHN MOORE

The typical business software application rarely wins kudos for approachability and intuitive appeal because functionality trumps the user interface and overall user experience. The result, in many cases, is slow user adoption, a hefty investment in training and sluggish delivery of ROI.

To combat this, some IT chiefs and software developers are beginning to equip their enterprise apps with social, intuitive interfaces that borrow heavily from Facebook, Pinterest, Twitter and other mainstays of consumer culture.

The Engineering Firm: That approach appealed to Rana Blair, principal in charge of IT and other functions at ECOM Engineering. The firm, needing a better way to coordinate project teams, selected Deltek's Kona product, a cloud-based collaboration tool that combines social media and project management for professional services firms.

Kona's ease of use intrigued Blair. "I don't take tutorials or review feature sets," she says. "I'm of the mind that, if I can't use it right away, then no one else will."

ECOM Engineering previously relied on email for project collaboration, then tried Web-based tools such as Basecamp, Google groups, Ning.com and Facebook. "I had no success in getting adoption with the groups I manage," Blair recalls. "Kona is the first tool that people have actually latched on to."

Kona provides "spaces" for group conversations, like Facebook's Wall, but the spaces are dedicated to a specific project and its associated calendar events and tasks. The software has a high adoption rate, she says, and has reduced the company's dependence on email as an information archive to near zero.

The Marketing Firm: Another consumer-meets-enterprise story is playing out at digital agency Razorfish, which plans to move its employees to the Adobe Marketing Cloud.

That suite, which includes analytics and social marketing software, has a revamped user interface similar to Pinterest. The interface consists of a feed of images—new ad concepts, for example—that marketing team members can annotate and comment on.

"We have been pretty amazed with the Pinterest interface," says Ray Velez, global CTO at Razorfish. He says the interface makes it easy for people at all levels of the marketing organization to participate in real-time conversations about images—without having to log in to a traditional content-management system.

John Moore is a freelance contributor to CIO.com.

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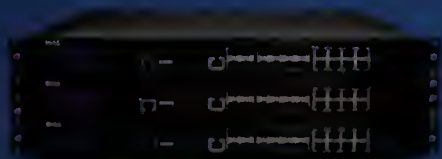
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LEGAL AFFAIRS

Get Ready for a Legal Disaster

CIOs usually have careful plans for what to do in natural disasters, but they need a litigation-readiness plan, too **BY JOHN CURRAN**

The phrase “all roads lead to Rome” describes the importance of a city at the heart of an empire. When it comes to modern litigation, all roads lead to the CIO’s desk, because information is the lifeblood of litigation.

Just as CIOs should have contingency plans for a network crash, they need a litigation-readiness plan for responding to legal requests for electronically stored information, a process called e-discovery.

Timeliness is critical. Responding inefficiently after notice of a triggering event often results in the loss of data, which can lead to legal sanctions against the company and avoidable costs.

Upon receiving notice, team members must be prepared to immediately identify relevant data sources, communicate requirements to preserve data (called a legal hold), and suspend automatic data-purging operations, such as the routine recycling of tapes or auto-deletion of emails.

In addition, CIOs must have access to tools like litigation-hold-tracking software and software that preserves structured and unstructured data found on the network,

including data stored on user devices such as PCs and smartphones. This software must retain data without altering its content or metadata, all while maintaining adequate audit trails.

CIOs should also be able to make a clear-eyed assessment of internal capabilities and figure out when to call on outside vendors such as security incident response experts, computer forensic technicians and e-discovery providers.

An often-overlooked task is managing (and perhaps purging) the stockpiles of e-discovery data after the litigation is over. Neglecting this post-litigation process increases the risk of a data breach and the risk that this legacy data could be swept up into a new legal case.

Finally, the litigation plan can’t be static, given the constant change in technologies and data sources. CIOs should regularly collaborate with their company’s general counsel to ensure their litigation-readiness plans are up-to-date.

John Curran is executive managing director of Stroz Friedberg, a global digital risk management and investigations firm.

Streamline Your Overstuffed App Portfolio

Is your application portfolio bursting at the seams? Chances are that it is, and many of the applications are either unused or underused, which could be costing big bucks.

Harris Interactive and Dell surveyed 150 senior IT decision-makers from organizations with \$500 million or more in annual revenue. Fifty percent of respondents said their enterprise has more than 500 applications deployed, and 34 percent have more than 1,000 applications deployed. Yet 57 percent of respon-

dents said their workers use fewer than 249 applications on a typical day and 28 percent said staff use fewer than 50 apps a day.

“These findings point to the need for IT to get a grip on application bloat and think twice about whether they need to add new apps,” says John Newsom, VP and general manager of application performance monitoring at Dell’s Quest Software.

Newsom says slow, crashed or unresponsive apps cost enterprises bundles of cash. More than half of the survey’s respondents reported that these problems cost them hundreds of thousands of dollars a year.

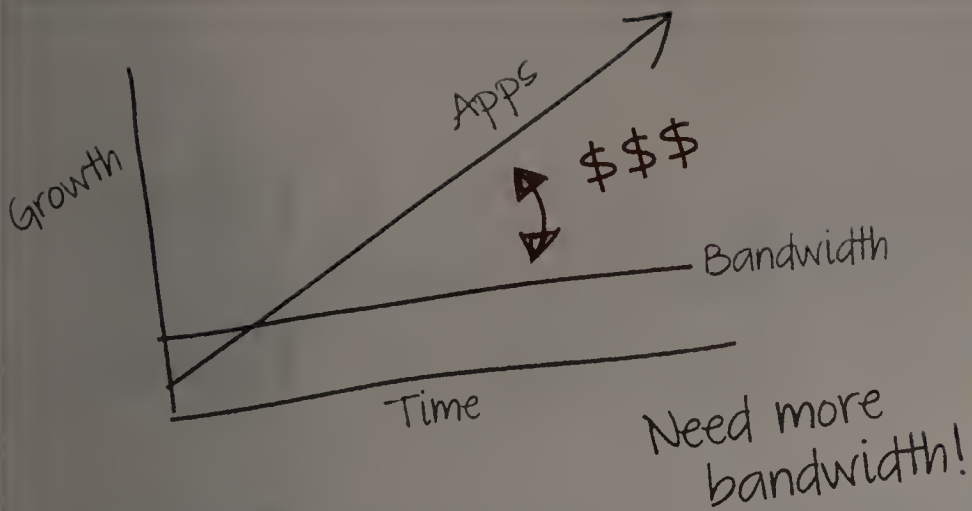
“Most companies have far more applications than the business needs and are forced to spend valu-

able IT resources on supporting obsolete systems from the past instead of focusing their assets on future growth,” according to a 2011 report by Capgemini.

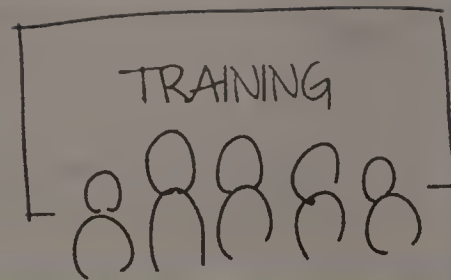
Companies accumulate applications via merger, acquisition or custom-building applications for unique business processes—but often lack a process for retiring them.

Capgemini’s report called for a lifecycle approach: If an application is no longer used to support a current business process, it should be retired and its data archived. Doing so will lower energy bills and free up engineers to focus on developing innovative IT systems rather than maintaining outdated ones.

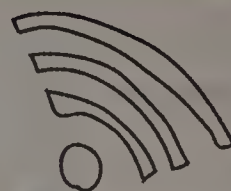
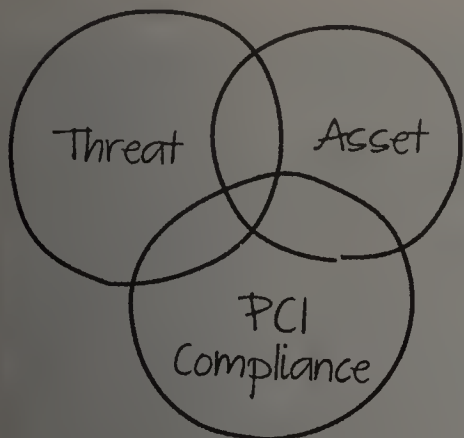
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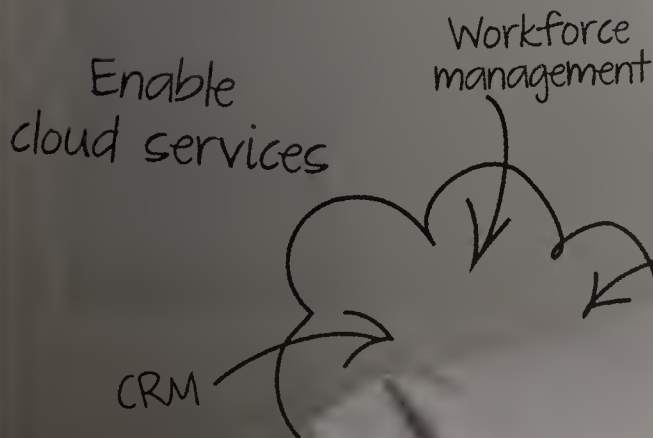
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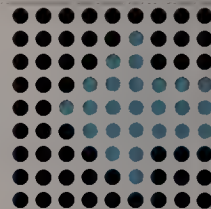
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Files in the Cloud

Box, an online file-sharing service, is a user-friendly collaboration tool, but it faces big competitors

BY JUAN CARLOS PEREZ

THE PITCH

Box offers a cloud-storage and file-sharing application for businesses of all sizes. "Box helps companies work better with their employees, customers and partners using modern technologies that are cloud- and mobile-based," says Whitney Bouck, general manager of Box's enterprise division.

The privately-held company, founded in 2005, has raised almost \$300 million in funding and is backed by well-known investors such as Draper Fisher Jurvetson and Andreessen Horowitz. Over 150,000 businesses use Box, including more than 90 percent of the Fortune 500. Revenue grew almost 150 percent last year.

The company has been enhancing the product's features, gaining footholds abroad, expanding its partner ecosystem and beefing up its data center infrastructure. Its CEO told Bloomberg News that the company may go public next year.

THE CATCH

As when considering other cloud software, prospective Box customers need to decide whether they're comfortable storing their files in the vendor's data centers, says Rob Koplowitz, a Forrester Research analyst.

Enterprises also must weigh the challenges of customizing cloud services like Box and integrating them with on-premise software, he says.

"That deep integration between cloud and on-premise properties is much more difficult to achieve with cloud software," Koplowitz says.

CIOs must also consider that Box plays in a crowded market against products from larger rivals, such as Microsoft's SharePoint and EMC's Syncplicity, as well as against tools from Citrix, Good Technology, Accellion and YouSendIt.

"Box is a relatively new and small company compared with some of its competitors," says Gartner analyst Tom Eid. Plus, Box's collaboration and content-management functions are basic and lightweight compared to rival products, he says.

THE SCORE

Six Flags Entertainment, a theme park company, adopted Box several years ago because it needed a better collaboration tool for sharing large media files with its ad agency and other external parties.

Previously the company had been using mostly email for that task, but the email network bogged down when people sent files larger than 10 megabytes, and the collaboration process was cumbersome.

"Box gives you a great environ-

THE COMPANY

Box Inc.

Headquarters: Los Altos, Calif.

Employees: 750

Revenue: not disclosed

CEO: Aaron Levie

What They Do: Box, a cloud-storage and file-sharing service, lets employees do document-centric collaboration with each other and with outside parties. The Box service can be accessed from computer browsers and mobile apps for all major platforms. Box also provides IT management and security features.

ment for large files you need to collaborate on, or to distribute them externally," says Sean Andersen, Six Flags' director of interactive services.

He says Box's user-friendly interface has helped spur its adoption.

"We keep Box organic. We don't force it on people. Our end users find it and come up with ways to use it, sometimes in ways that surprise me and our CIO," he says.

Andersen says Box works well on desktop computers via the Web interface and on iOS devices via its mobile app. He also likes the IT administrative features such as single sign-on and enterprise directory integration.

However, he also says he would like Box to add more integration hooks to on-premise storage systems, and to develop native, complementary applications for tasks like note-taking, task management, presentation sharing and PDF editing.

Juan Carlos Perez is a senior editor with IDG News Service.

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Windows 8 In Your Back Pocket

New Enterprise Feature makes it Easier to Support Flexible Workstyle Scenarios



IT organizations face many challenges supporting the changing workstyles of users who want access to work resources anytime and anywhere, working from their own devices while at the office or on the road. Network connectivity may be a challenge—or non-existent depending on where the worker is located. In the case of contract employees who require access to enterprise resources, provisioning PCs on demand is not always practical or feasible. Windows To Go, a new feature of

» Windows To Go offers workers new ways to stay fully productive and connected. For starters, Windows To Go makes it easier to support BYOD policies.

Windows 8 Enterprise, helps address these challenges by literally putting a fully manageable, corporate image of Windows in your back pocket.

In contrast to traditional PC deployments where users boot from the internal hard drive of the machine, organizations can deploy Windows 8 Enterprise on a bootable certified USB drive. With Windows To Go, workers simply insert the Windows To Go USB drive in

any compatible computer and boot into their personalized Windows 8 work environment—network connectivity not required. This “plug in, boot and go” functionality allows organizations to support a wide array of work scenarios with minimal new management infrastructure or investment.

» Empowering Mobile Workstyles

Windows 8 is business-ready by design, building on the foundation of Windows 7 to deliver the speed, reliability and functionality users want with the manageability IT needs. Designed to meet the mobile productivity, security, manageability and virtualization needs of today's businesses, Windows 8 Enterprise key features include Windows To Go, DirectAccess, BranchCache and AppLocker, as well as VDI enhancements and new Windows 8 app deployment capabilities.

While not intended as a replacement option for all enterprise devices, Windows To Go offers workers new ways to stay fully productive and connected. For starters, Windows To Go makes it easier to support workers with Bring Your Own Device (BYOD) policies when they want to work on their own PCs.

Windows To Go is literally Windows 8, to go. All of the management and security technologies in Windows 8 Enterprise work in Windows To Go. Businesses can

supply employees, contractors and temporary workers with Windows To Go drives for access to the corporate environment without compromising security.

» Putting Windows To Go to Work

Envision this scenario Jenny's primary PC is a laptop provided by her company, but when outside the office she prefers to work on her own personal device. That personal device, however, does not have access to resources on the corporate network, such as internal sites or shared document locations. When Jenny asks the IT team to support loading a VPN client on her personal computer, she's told that it's against corporate policy. But with Windows To Go, IT can manage the security of the Windows image that is used on Jenny's Windows To Go drive so she can connect to work resources and remain fully productive outside the office. This way Jenny's image complies with her company's policy while accommodating her need for convenience and flexibility.

In addition to BYOD scenarios, Windows To Go enables businesses to support a variety of other key scenarios:

» **Work from home:** Employees travel light with their corporate image, apps, and policies provisioned on a Windows To Go drive for use on their home PC.

» **Temporary or contract workers:** Similar to BYOD, Windows To Go can be used on the PCs that temporary or contract workers bring with them, alleviating the requirement of provisioning a new PC for each new contractor or temp. By having those workers use their own devices and boot from a Windows To Go drive, they run the corporate supported image and have access to the files or apps needed to do the job. When they're finished, they simply return the Windows To Go drive.

» **Up and running on Windows 8:** Organizations can help employees test, evaluate or take advantage of Windows 8 features on their existing hardware (such as a PC with Windows 7) before deploying it to their PCs—including testing new internal Windows 8 apps or custom internal configurations before broad PC deployment.

» **Maintain business productivity:** With the ability to plug a Windows To Go USB drive into

any compatible PC, users can continue working during unexpected events that compromise primary PCs or work locations, even if there is no network connectivity.

» Exploiting New Options

From an enterprise perspective, one of the biggest advantages of Windows To Go is the ability to provide mobility without changing the existing infrastructure. Because Windows To Go requires no additional software and minimal configuration, many of the same tools used to deploy images to other PCs can be used to deploy Windows To Go on a large group of USB devices.

Wondering about manageability? Windows To Go can be deployed and managed like a traditional desktop PC using standard Windows enterprise software distribution tools like System Center Configuration Manager. Computer and user settings can be easily managed using Group Policy settings.

Security is another important factor to consider with Windows To Go. When a user boots into a Windows To Go workspace, internal hard disks on the host computer are offline by default to ensure data isn't accessed accidentally. Vice versa, when a Windows To Go drive is inserted into a running PC, it is not accessible without booting. The use of BitLocker drive encryption with Windows To Go protects the drive from being compromised if it is lost or stolen. When BitLocker is enabled, a user must provide their password to unlock the drive and access data.

Windows To Go is a unique mobility solution allowing people to be productive from almost any location from which they choose to work. It is a native instance of Windows 8 Enterprise that runs from a USB device and is suited for enterprise usage scenarios such as BYOD, continuance of operations, contractors, managed free seating, traveling workers and working from home.

For more information on Windows To Go, visit www.microsoft.com/windows/wtg.

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By analyzing a wealth of weather information, multiple industries now profit from the shifting winds of Mother Nature

BY KIM S. WASH



hat itch in your throat and those watery eyes?

Merck, which makes the allergy pill Claritin, anticipated your hay fever and—a year ago—started making plans to capitalize on it. With a subscription to specialized weather forecasts, Merck knew way back last July that this March would be unseasonably cold in most of the U.S., leaving many allergens dormant. Then, quite quickly, May would bring lots of warmth, pollen and spores.

Merck shared its weather intelligence, based on temperature and moisture data correlated to customer behavior by ZIP code, with Wal-Mart. Together they decided to boost promotions and supplies of Claritin and other allergy products at the time when you were desperately ready to buy.

“The upside is potentially millions of dollars in additional sales,” says Debbie Sonnentag, Merck Consumer Care’s director of category development for Wal-Mart.

Companies in all corners of the economy are factoring weather data into their business strategies, hoping to turn a profit on Mother Nature. Sears monitors weather nationwide from a crisis command center, figuring out how to stock enough snow blowers in a winter storm and

air conditioners in a heat wave. Home insurer EMC Insurance analyzes hailstorm history to catch false claims. Westar Energy in Kansas schedules power-line repair crews with an eye on severe weather in other states, in case distant outages require their help.

DHL Express, a division of the \$73 billion global delivery company, uses weather data to make minute-to-minute decisions that affect 3,000 flights per day worldwide. Weather, says Travis Cobb, VP of hubs, gateways and network control for DHL’s Americas region, “is the million-dollar question.”



PHOTO BY STAN KAADY



gdata

from above

29

The Weather Channel, where **Bryson Koehler** is CIO, processes 20 terabytes of data about the weather every day and sells custom analytics to business customers.

Yet weathermen have a bad reputation for a reason: Getting it right is hard. The Weather Channel, for example, every day processes 20 terabytes of data about wind, rain, sleet, snow, temperature, tornadoes, air pressure, moisture, earthquakes, hurricanes, wave heights, lightning and ice, says CIO Bryson Koehler. And much more. Plus business customers can buy custom information created by analytics. Insurers might want to see rain accumulation modeled against auto insurance claims. Pharmaceutical companies can buy maps of air stagnation patterns to understand patient respiratory distress.

Consumer packaged goods companies, logistics businesses, restaurants, railroads, amusement parks, financial services firms—the list of weather watchers goes on. Some analyze how past weather influenced customer behavior, hoping to discover useful tidbits for the next marketing campaign. For others, anticipating future weather can reveal worthy risks to take and ways to avoid problems that competitors don't foresee.

"Weather is the original big-data problem," Koehler says.

Hot Competition

Weather provides no shortage of business opportunities because it affects everyone. Demand will probably never ebb. As a result, the world of weather data is competitive, niche-y and expensive. Google recently patented a robotic device that analyzes weather and a personalized navigation system that suggests changes to driving routes based on the weather. Some players even sell weather derivatives that companies buy to offset expenses incurred as the result of weather.

Dominating the market for weather forecasting services are The Weather Channel and AccuWeather, with market shares of 51 percent and 14 percent respectively, according to researcher IBISWorld. Both provide consumer weather forecasts and both vie fiercely for big-name business customers. The Weather Channel has Home Depot and American Airlines; AccuWeather has Lowe's and Union Pacific.

Smaller firms, such as Weather Trends International and CustomWeather, specialize in corporate accounts. Boutique weather companies focus on narrow markets, such as agriculture or energy. IT vendors such as CoreLogic and Planalytics offer weather information with analysis tools and services to integrate data from ERP, manufacturing and other IT systems.

Most of these companies scoop up free data from the

What's the Chance of Rain Where You're Standing Now?

Mobile devices and better analytics make it possible to deliver personal weather reports on cellphones, in cars and even on refrigerators

Lots of mobile phones come pre-loaded with weather apps from AccuWeather or The Weather Channel. But the companies want to go beyond local forecasts, which anyone can get by typing in a ZIP code. They want to combine sensors and geolocation technology to provide personal weather reports.

Using real-time analytics, weather companies intend to combine data about where someone is standing with other information, such as the air pressure and temperature, collected by sensors in the phone. The result will be a forecast tailored to the mobile phone customer as he moves around during the day. He could also query the data to find out, for example, the chance of rain at the company softball game he's about to play.

First, however, systems for data collection and the speed of analytics will have to improve to make personal weather forecasts possible, says Steve Smith, chief digital officer of AccuWeather. But his company is working on it. Smith also envisions collecting weather data from cars in motion, such as when wipers go on and when anti-lock brakes kick in.

"That's how you get to something actionable and relevant to you," Smith says. "We change weather from a commodity to something of value."

AccuWeather also works with appliance-maker LG Electronics to embed a weather app in high-tech refrigerators. Get your morning OJ and the day's weather all in one spot.

Readings from mobile devices could also make regional forecasts more accurate. Participating cellphone users would form a network of continuously updated weather data to fill gaps in existing weather-collection systems. For example, the average thunderstorm is eight to 10 miles wide, but observations from weather stations on the ground are typically 50 miles apart, says Randy Bass, a member of the aviation weather research team at the Federal Aviation Administration. A tighter network would make forecasts better, he says.

Personal weather forecasts are "very feasible," Bass says. "Is it perfect? No. But it will be better than watching TV and guessing what conditions will be at a certain time."

—K.S.N.

National Weather Service, whose mission is to protect life and property and enhance the national economy. But that's just a starting point. The companies supplement that information with data collected from their own systems and sensors, as well as from niche players. Then they run it through secret algorithms, interpret it and create new products.

For example, AccuWeather's Weather-Triggered Marketing service supplies a stream of data to help companies choose the best periods to offer a discount or increase inventory, for example, or to help them post social media updates that make sense given local weather conditions. Facebook friends in Miami don't want to be bothered with Wisconsin's ice storm. Custom services include analyzing item-level point-of-sale data



CLOUD SERVICES HELP
IMPROVE PRODUCTION.
AND THAT HELPS **FEED THE PLANET.**

{POWERFUL ANSWERS}

A man wearing a cap and sunglasses is kneeling in a field of green crops, holding a tablet. The background shows a vast agricultural landscape under a cloudy sky.

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Debbie Sonnentag, Merck Consumer Care's director of category development for Wal-Mart, uses weather data to adjust supplies of allergy drugs to meet the expected demand.

against weather events to see patterns. AccuWeather says it can find relationships among local sales data and up to 200 weather variables. One gem: the top-selling food during hurricanes is blueberry toaster pastries.

This analysis requires a different kind of IT department. "Research and development is a huge piece of IT here," says Steve Smith, chief digital officer of AccuWeather. Smith stacks his staff with data-scientist types who become experts on specific industries, such as railroads, retail or commodities trading.

The posturing by these companies can be entertaining. In marketing material touting its forecasts of February's snowstorm in the Northeast, AccuWeather dissed rival Telvent DTN for describing what turned out to be a record-setting storm as "brisk." The Weather Channel, which holds 77 patents, proclaims, "The only thing more powerful than the weather is our ability to help you profit from it."

Still, there's lots that can't be foreseen about weather, and companies rightly worry about it.

Satellites 23,000 miles up and sensors all over the ground—on portable weather stations, buildings, vehicles, mobile devices—take millions of observations at regular intervals that

are analyzed by public and private weather organizations. But the band of space between Earth's surface and orbiting satellites is where the wild stuff happens. Two thousand to 10 thousand feet up, weather changes. Winds die or cold fronts break up. Precipitation evaporates or the air warms.

Conditions in the lower atmosphere make all the difference, says Randy Bass, a member of the aviation weather research team at the Federal Aviation Administration. The three to five inches of snow a broadcaster predicts for Wednesday turns into a foot dumped on an area where the temperature unexpectedly dropped 10 degrees. Then everyone says the weatherman blew it. Airline pilots and weather balloons transmit reports from that mystery band, but they aren't enough. "There's no good way to get data from there in the amount and with the timeliness we need," Bass says.

All of which makes weather a favorite scapegoat for companies that miss financial expectations. In recent conference calls with Wall Street, various executives cited weather as the reason behind disappointing sales of sandals, green beans, doughnuts, books, airline tickets and auto parts.

In its latest annual report, FedEx issues a broad warning to

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1

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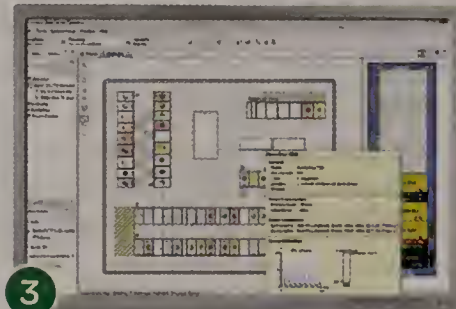
Get information to stay well-informed of energy market opportunity and/or market risk.



2

Identify excess capacity

Find stranded capacity and determine which devices can be decommissioned or used elsewhere.



3

Report energy use/cost

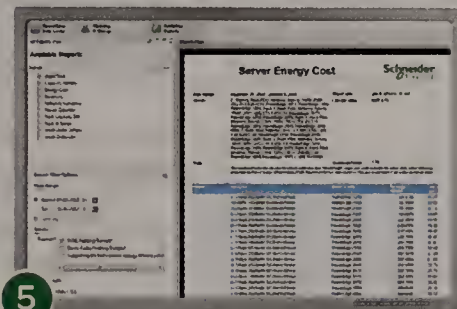
Collect, analyze, and report on your energy cost and consumption at the macro or micro level.



4

Show PUE across IT/facilities

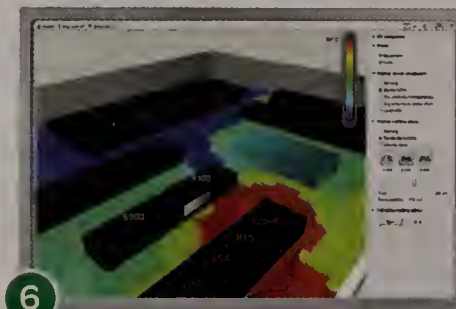
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5

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6

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Energy-efficient availability

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investors: "We are particularly vulnerable to the physical risks of climate change that could affect all of humankind, such as shifts in weather patterns and world ecosystems." Nothing like covering every base.

But with so much data available, often for free from the federal government, and with so much computing power on hand to crunch it, companies won't be able to claim to be surprised by the weather anymore, says Al DeChellis, a supply-chain consultant and former VP at Alberto-Culver. "If you're selling seasonal products and you're not using weather data, you're not doing your job."

Seeing Through the Fog

At Alberto-Culver, which is now owned by Unilever Group, DeChellis pioneered the use of weather data 8 years ago to sell one product: Static Guard. The spray can of chemicals to get rid of annoying static cling is a seasonal product, but not in the way people assume, he says. Cold weather isn't the culprit; relative humidity is. If humidity sinks to 50 percent for at least three weeks, static electricity builds to levels that make a skirt stick to a woman's pantyhose.

DeChellis' team worked with Planalytics to correlate dry air to consumer sales by geography and convinced some retailers to pay more attention to Static Guard, he says. In the Chicago market, for example, salesmen sometimes convinced retailers to promote Static Guard two or three times per year, rather than just once. "We considered it a major win," he says.

Scott Jean, chief actuary at EMC Insurance, is something of a weather detective. He knows hail is a big deal in the Midwest. So are homeowners' claims of hail damage: Hail accounts for about 30 percent of the company's homeowners' claims, and payouts have been increasing, he says.

"Weather is the original big-data problem."

—Bryson Koehler, CIO, The Weather Channel

As the recession hit the U.S. in 2009, Jean noticed an uptick in hail claims. He suspected the involvement of storm-chasing opportunists who call on homeowners after a bout of hail and, for a fee, inspect their roofs and help file damage claims. "They will find something wrong with a roof that could have been there 10 years before we insured the homeowner," Jean says.

With hail data supplied by CoreLogic and Doppler radar material pinpointing hailstorms to specific dates and locations, EMC Insurance can catch errant claims. But the insurer drills down further to consider the size and intensity of a hailstorm as well as the age of the roof. "Pea-size hail won't do damage to a good roof, but a storm chaser will say otherwise," he explains. "We can argue reasonably that it didn't occur."

Whether the guy who inspected the roof is dishonest or just mistaken, EMC Insurance doesn't want to pay bad claims.

Homeowners insurance isn't usually profitable for insurers, but Jean thinks it can be, with judicious and methodical analytics, of which weather is a key piece. "We should be able to be profitable without overcharging consumers," he says.

Advances in analytics technology in the last several years, combined with plentiful weather data, allow such analytical creativity and exactitude, says Tom Davenport, senior adviser to Deloitte Analytics and professor at Harvard Business School and Babson College.

IT organizations are good at excavating data from internal systems and using technology tools to combine it with outside information. But some IT groups aren't as good at understanding the context in which the material will be used, he cautions. With weather data, such insight is important. Not only do CIOs want to facilitate access to useful data, but they can also help the company create new products or services. Or help streamline operations.

No one can predict the weather correctly all the time, but getting a peek at what's coming can help the business, Davenport says. "You can't control it, but you can control for it."

When Disaster Strikes

Sears faces troubles in retail overall, but the \$39.8 billion national chain brought its size, experience, business relationships and technology to bear in its successful response to the Nemo winter storm in February.

As Nemo developed, the crisis command center at Sears headquarters jumped into action, says Raj Penkar, president of supply chain at Sears Holdings. Established in 2010, the command center runs seven computer monitors tracking various data and information. From local and national news feeds, Google Earth and other sources, Sears created maps of the affected areas, color-coded according to expected severity. Red is bad, and there was a lot of red on Sears' Nemo map. Staff members from the risk management, facilities, corporate communications, inventory management, logistics, transportation and IT departments together made decisions about employee safety and store operations, Penkar says.

As reports about Nemo made it clear the storm would be a whopper, Sears scanned its inventory, store and warehouse systems to get the latest data on product stock levels. The crisis team figured out what extra inventory would be needed and how to move it closer to the trouble spots. Sears put extra snow blowers and generators, among other "recovery" products, in or just outside affected areas, ready to go to individual stores as Nemo passed. In some areas, once the roads were clear, Sears asked suppliers to truck inventory directly to Sears stores in New England, bypassing the usual stops at regional distribution centers. Of course, Home Depot and other competitors were doing the same thing, Penkar notes.

"When something like this happens, everybody needs trucks and vendors," he says. "Not to be negative, but we all try to help customers and at the same time, we're all trying to run a business."

In the days leading up to Nemo, Sears had a supplier reroute four truckloads of generators in Atlanta up to the Northeast. A supplier in Wisconsin held six trucks of generators for Sears

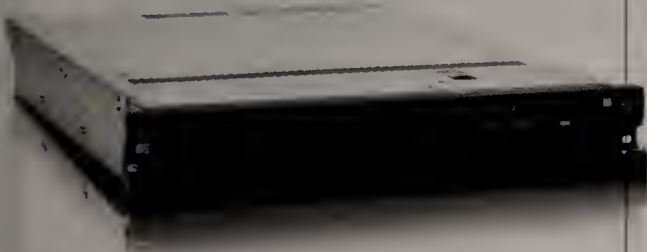
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Today's businesses are faced with a range of IT challenges — aging infrastructures; limited budgets and resources; and the rapid proliferation of data in our increasingly interconnected world. This new world requires new thinking about how computing can help meet the demand for services.

Most data centers are trapped in a vicious cycle in which a rigid infrastructure and lack of trusted systems management data lead to reactive decision-making. Attempts to overcome these challenges through additional IT investments often result in greater server sprawl and more costly infrastructure demands.

The question is how to address these challenges while seizing the opportunities. The wrong moves could cost IT organizations dearly. Clients need solutions that integrate hardware, software, support, and services — plus a partner with tremendous experience and expertise in managed services. IBM is that partner.

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- Robust servers enable improved analytics for new value-added smarter services that generate new sources of revenue

Solutions for smarter computing

Organizations are increasingly focusing on IT solutions to address these issues. The market for cloud, analytics, decision support, and technical computing solutions continue to grow at a significant rate.¹ When asked for their top IT priorities for 2013, CIOs listed analytics & BI; mobile technologies; and cloud computing at the very top. Mobile, big data/

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analytics, social media, and public cloud technologies were identified as the most disruptive. This presents IBM with an opportunity to assist our clients.

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¹"Hunting and Harvesting in a Digital World: The 2013 CIO Agenda", Gartner, 1/16/13.



to pick up. The evening before Nemo hit full-on, Sears issued a press release about stores stocked with the right equipment. The release also noted that people could expect two inches of snow per hour and winds of 50 mph, and that Sears offers convenient in-store pickup of online orders.

Each day, Sears managers received several "LogHot" email alerts showing the severity of the storm. The alerts included maps of the storm's predicted path and the number of stores and distribution centers that could be affected. Key personnel carried special cellphones reserved for storm communication. Field employees updated a private wiki with on-the-scene information. Entries from staff at Sears' Gouldsboro, Pa., distribution center, for example, included notes on roads that had been shut down, regional delivery centers that had been closed and stores whose delivery trucks weren't unloaded due to the storm.

Sales figures from that period are one way to assess Sears' agility in handling the storm, Penkar says, but more importantly, "The right product [was] there, that our customer needed."

DHL Express prides itself on its intense focus on how weather affects customer satisfaction. DHL analyzes feeds and data from, among other sources, the National Weather Service, partner airlines, airports, AccuWeather, The Weather Channel, and a hive of organizations that specialize in weather as it affects flying. Its three network control centers in Cincinnati, Germany and Hong Kong are staffed 24/7. The data never stops.

Of course, Mother Nature can be tricky. "Sometimes you can look at it too closely and make decisions off one 5-minute data set, and the next thing you know, the weather's gone," says Mark Becker, director of the network control group at DHL Express.

What guards against that? "Experience," Becker says. Most of his duty managers and controllers have 20 or more years on the job.

Visibility, as you might imagine, is DHL's watchword as it manages the 3,000 flights per day carrying packages to its customers in 220 countries. Betting correctly that airports would be a mess in the Northeast after Nemo, DHL flew its planes out of major airports before the storm, keeping them at its hub in Cincinnati. The contingency routing decisions were based on experience, terabytes of data, and IT systems to model scenarios. The process is worlds better than it was years ago when weather information was scarcer, says Cobb, the VP of hubs, gateways and network control.

In the past, "you would see the 6 o'clock news, the 11 o'clock news and make decisions," he says. Even now, working with incomplete and sometimes wrong information can't be helped, he says. "Each situation is unique. What we try to do is mitigate risk."

DHL faced its most unusual weather challenge in 2010.

A large volcano in Iceland started to erupt in April of that year, after 200 years of quiet. Soon a giant cloud of ash covered surrounding countries, at times up to seven miles high. Government officials shut down most of northern Europe's air space for eight days in April while the cloud lingered, and sporadically in May as parts of it drifted back. Worldwide, 104,000 flights were canceled during that period, up to 19,000 per day.

As the cloud broke up and parts of it drifted unpredictably,

"If you're selling seasonal products and you're not using weather data, you're not doing your job."

—Al DeChellis, former VP, Alberto-Culver

air safety officials had to react to the changing situation. Even when they opened the skies to planes, DHL had to determine for itself whether and how to fly. "That was dynamic," Cobb says, understating the tension of those days.

A DHL plane was one of the first to fly into western European airspace when the sky cleared, a move worth a lot to its reputation and, therefore, its business, Cobb says. "The passion of this company is to be the last out, first in," he says, adding that the company's market share increased afterwards.

Removing the Emotional Factor

Making the best decisions in the moment with imperfect information challenges even the smartest managers, Davenport says. You try not to sully the statistics with biases or inaccuracies as you use them to conjure scenarios and play out ideas, he says. But that's a particular danger when using weather data, says Koehler, CIO at The Weather Channel. "Telling the story of weather," as he puts it, is often how even the most accurate forecasts get mangled. The Weather Channel has written a lexicon to translate weather numbers into language that consumers of the information can understand. For example, when the probability of precipitation is 60 percent or more, forecasters say "likely." When it's below 60 percent, they say "chance."

Back at Merck, Sonnentag cautions her team not to get carried away adding subjectivity to the weather data they use. People "tend to be emotional" about the weather, she says. Before Merck used weather facts, people would attribute up or down sales to whatever local weather they happened to experience, she says, "even though that was based on a single market, sometimes a single day." Hard data removes subjectivity.

Meanwhile, she hopes her second bet, on a prolonged allergy season this autumn, will pay off. For about the same amount of time that spring weather was delayed by this year, nice days are expected to continue into the fall in the Northeast. Look for a warm October, they say.

So Merck plans to promote Claritin more than it normally does in the autumn months. Sonnentag has faith in her weather data. Planning for the summer core of allergy season "is easy: Have everything everywhere," she says. "But stepping into and out of the season, we're really finessing that this year."

The risk is that weather will shift and Merck will have overstocked Wal-Mart's distribution centers. Merck could lose money if it has to truck a lot of unsold Claritin back home and throw out expired lots, she says. She'll know in a few months. **CIO**

Contact Managing Editor Kim S. Nash at knash@cio.com. Follow her on Twitter: @knash99.



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When these companies went global, they leveraged IT to unify, localize and lay the foundation for future growth

JOE ABIDAUD, HUDBAY MINERALS

UNIFY THE BUSINESS

After many years of operating in Canada, we acquired a mining project in Peru. We are truly a global company—one that is multilingual and operating in several jurisdictions and cultures—so we are using technology to help build a unified corporate identity and to minimize the effects of geographical distance and language differences. We standardized our collaboration platform and basic functions like email, document management and communications. In 2012, we moved these to the cloud so we could provide services quickly and consistently throughout the world, at low cost, without making significant infrastructure investments. In a commodities-based global industry, the cloud enables us to scale up or down quickly.

Today our email is in the Google cloud, providing employees with a con- ►►►



Joe AbiDaoud,
CIO, HudBay
Minerals



Peter Weis,
VP and CIO, Matson



John Collins,
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WHAT HAPPENS WHEN

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►►► **Globalization** Continued from Page 38

sistent look and feel, whether they're in North America or South America. We strive to be device-agnostic—employees use various devices to access their email—and Google has some basic translation capabilities, so I can translate an email I get in Spanish into English. We also have some collaboration capabilities like shared calendars, online video, chat and documents that let us work as one company.

PETER WEIS, MATSON

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For more than 120 years, Matson focused primarily on the Hawaiian market. Nearly 10 years ago, we expanded internationally into China, and we knew then that our IT strategy needed to enable global expansion. We've embedded globalization into all four components of our IT strategy: applications, organization, architecture and governance.

We now operate all enterprise applications on a single, virtualized, Internet-based technology stack. By eliminating multiple instances of applications, each with different business rules and on different IT platforms, we can cost-effectively provide consistent levels of service globally, and can expand into new geographies quickly and inexpensively. We can easily add new IT capacity on demand as business volumes grow.

We also have a follow-the-sun strategy for 24/7 application development, with IT staff in both China and India. Organizationally, we hired an IT manager in Shanghai, who has been instrumental in our recent expansion into New Zealand and in our rollout of new applications in China.

IT can't help with global growth by being merely order takers. We must have a seat at the table. We as CIOs can do that by making sure we are trusted and respected, and by ensuring that strong executive-level governance is in place. The right governance ensures IT is involved in the early stages of new initiatives, such as our recent expansion into New Zealand.

JOHN COLLINS, DIGI-KEY

STANDARDIZE AND LOCALIZE

We do business in 170 countries worldwide through e-commerce sites supported 24/7 by our Minnesota IT team. One of the things Digi-Key prides itself on is being reliable and easy to work with, no matter where our customers are located. This is why many of our e-commerce sites are in the native language of the customer or, in the case of countries like Germany and Switzerland, are multilingual. We support multiple currencies as well, which necessitates significant involvement from IT because it requires coordinated activity across many of our systems, such as pricing, ERP, shipping and our corporate financial systems.

We have strategically placed a few local call centers around the world that provide localized customer support. Each of these centers uses our central ERP for order processing, which we rolled out worldwide through Citrix. This results in a very consistent sales cycle for customers—they know exactly what's happening at exactly what time, no matter where they are ordering from. For our multinational customers, the ordering process is the same, no matter where their employees are located. Our consistent customer experience is one reason engineers rate Digi-Key websites highly.

TAKE Note

POV on Women in Leadership

LISTEN Female IT leaders offer an unusual style of team leadership in this male-dominated profession. In this webcast, Pamela Rucker—founder of The Rucker Group, former vice president of IT at PSC and co-chair of the CIO Executive Council's Executive Women in IT community of practice—offers tips on how to translate a corporate vision into a successful leadership philosophy. Topics include leading your team in a way that drives business growth, turning a vision into a plan and using different leadership styles to manage varying personalities. council.cio.com/style

Develop the Future of IT

DOWNLOAD As technology becomes more and more integrated into every aspect of the business, senior IT leaders are facing new challenges and expectations from business stakeholders. Guest speaker Barbra Cooper—former CIO of Toyota and a founding member of the CIO Executive Council—knows firsthand how technology is driving innovation in business and transforming the customer experience. Download this CIO Executive Council webcast to learn from her insights into the future role of the IT leader and what companies can do now to prepare future IT leaders for success. council.cio.com/future

The ROI of Reorganization

READ For years, every department and school within the Memphis City Schools system procured its own IT services. That led to having way too many applications—1,000 and counting—which created an IT support nightmare. The school system's CIO, Rich Valerga, reined in the IT budget by centralizing decision-making and taking back some control of IT spending. The result: a 20 percent reduction in IT costs and an emphasis on data-based decision-making. For details on expected 2014 results and how IT built trust through this organizational change, check out the CIO Executive Council's Peer Intelligence case study. council.cio.com/memphis

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Sharing the IT Responsibility

At Energy Future Holdings, CEO John Young emphasizes the human factors behind IT **BY MARTHA HELLER**

Energy Future Holdings is a 130-year-old company, with disparate systems developed over a long time. Maintaining all that must get expensive. How are you solving that problem?

Our IT department and business units understand we are in an industry where competition is intense, and success depends on our operations performing at the highest levels.

I think of processes a little differently than most people do. In a leadership team discussion, somebody may ask, "Who owns the process?" Well, I don't believe process ownership lies with just one person or department. Every process falls into four categories: governance, oversight, support and performance. That's an engineer's approach to driving alignment and accountability.

the shoes of your business partners and know what their real interests, objectives and challenges are. That way, when the three or four of you are in front of the CEO, or the board, it's evident you are truly aligned on how technology fits into the larger business strategy.

Presenting to the board is an area that some CIOs struggle with. Any advice?

When I became CEO in 2008, I got my folks around the table and said, "Look, whether times are good or bad, we are always going to be direct and honest." That's the advice I would give a CIO. Kevin gives quarterly updates to our board, and that's one of the reasons he's gained so much credibility. He presents critical updates in a concise manner, the good and bad, so that our board is informed and confident in the direction being taken.

How has technology changed your leadership style?

When you get hundreds of emails per day, you are in this rapid-fire communication mode, making decisions more quickly, and you get very few opportunities to read people's body language. As a leader, I need to remember that while technology gives us efficient ways to get the word out, at the end of the day, face-to-face interaction makes a difference.

Martha Heller is president of the executive recruiting firm Heller Search Associates and author of *The CIO Paradox*. Follow her on Twitter: @marthaheller.



Being a CIO is about getting out to each part of the business and listening a lot.

In addition to IT leading a major infrastructure transformation and virtualization initiative, we are standardizing our business processes and systems across the back office, which will enable a 40 percent consolidation in applications. We have many production facilities, and we need them to share a common set of platforms and tools. This not only offers cost benefits and operational improvements, it also lets people to move from plant to plant, using common tools and processes.

Standardizing back-office processes in a \$6 billion business is a major effort. How do you keep business leaders accountable?

Once everybody recognizes that processes are owned collectively, with specific responsibilities around four governing principals, you get a lot more cooperation and shared accountability. This allows Kevin Chase, our CIO, to play the role of consultant, adviser and implementer of new solutions in collaboration with the business, rather than running a group that pushes technologies onto the business.

How can other CIOs build the kind of credibility that Kevin Chase has with you?

Being a CIO is about getting out to each part of the business and listening a lot. You need to put yourself in

VIEWPOINT

**Neal Hemenover**

VP OF IT, VEOLIA
TRANSPORTATION

Based near Chicago, Veolia Transportation is the largest private-sector operator of multiple modes of transit in North America, including bus, rail, paratransit, shuttle, and sedan and taxi services. Veolia Transportation is committed to setting the standard in safe and sustainable mobility solutions through partnerships with cities transit authorities, airports and universities.

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Video conferencing: the tie that binds a distributed workforce

VP of IT says Veolia gets it done with low cost, flexible solution

What special communications challenges does a highly distributed workforce such as Veolia's pose for IT?

We have a very dispersed group, including corporate, regional and local organizations. We are in nearly 200 locations in North America and have a strong need to share best practices among our staff. We in IT see it as our mission to help facilitate information flows between corporate, regional and local teams. We are excited about video conferencing because it provides a more personal experience and can facilitate communication and help build trust among people in different parts of the country. It obviously has some key advantages over "normal" conference calls. And we needed a more affordable way to communicate personally other than getting on a plane.

Are there solutions other than video conferencing you tried previously to solve some of these challenges?

We tried SharePoint some years back to tie in some collaboration of sharing files through our business development team and some other departments as well. And it does an OK job, but it really didn't take it to the next level for us to be more of a driving force in enhancing collaboration and communication. Collaboration in words, in blogs and the like has been OK, but having that personal, visual communication enhances the process of sharing experiences and solutions, which is a key goal. We had a lot of meetings; we had a lot of conference calls. Now there's just this new layer of ways to collaborate and see each other and build intimacy with video that's pretty terrific.

Why did you settle on a collaboration solution from Blue Jeans Network?

There's a long list of vendors that I reviewed and tested. One thing that stood out with Blue Jeans is the multiple

modes of communication that allow you to connect specifically with Blue Jeans' particular cloud-based solution. I wanted my executive team to travel anywhere in the world and be able to do a video conference, not be tied to a specific type of technology or have to be in any specific room to do these kinds of things.

What else appealed to you and to Veolia?

Some people in our organization were comfortable using Skype, others with Google Video Chat or other cloud-based consumer products. Blue Jeans ties in all of these types of consumer products. Also, we have clients with more mature conference room systems in place. I found very few solutions that could connect to all these consumer and conference room-based systems other than Blue Jeans. And it is so very simple to use, even if you have never used video conferencing before. You just connect to an Internet browser and go, as long as you have a Web camera.

How has the Veolia staff responded to the Blue Jeans solution?

We started with a grassroots approach and a desire for more communication to allow workers to reduce in-person meetings by half or a quarter even. Our rail group stepped up and began testing Blue Jeans and really enjoyed the experience. Then workers started generating their own ideas of how to use the solution and get more workers involved. We quickly got started seeing a lot of usage of Blue Jeans!

What are the chief benefits you've seen?

Certainly cost savings, as we had hoped for from the start. But in an organization such as ours, we benefitted a lot from the additional collaboration, communication, problem solving and sharing of best practices among our workers. ■

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Workers in high-pressure fields like emergency medicine and nuclear plant operations make critical decisions every day. When they have questions about complex situations in the field, consulting someone with more expertise can make a world of difference. Palo Alto Research Center (PARC) and vendor Intelligent Product Solutions have combined voice and video technology in a wearable system that allows an ER doctor, for example, to see exactly what an EMT sees through a headset camera. A nuclear technician, meanwhile, can view remote content, such as repair instructions annotated live by an expert, through the headset's eyepiece. This real-time visual connection means "the ability to debug a problem is in shared mode," says Mike Roberts, a principal at PARC and a key developer of the HC1 headset combo. Nuclear power maintenance company Areva plans to use the headsets in part to reduce the number of workers in restricted areas, thereby protecting more people from exposure to radiation.

—Lauren Brousell

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²Results achieved by comparing recommended system to IBM System x3650 (with Xeon® E5205) using IBM Systems Consolidation Evaluation Tool (<https://roianalyst.alinean.com/stgi/>). The comparison is between IBM System x3650 M4 and x3650 (does not include x3650 M2 or x3650 M3).

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